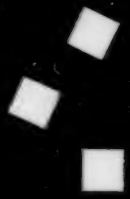
Annual Report

Research and Major Equipment Grants

Individual Awards

1983 1984

The Ontario Mental Health Foundation



The Ontario Mental Health Foundation

Established by Special Act of Legislature of the Province of Ontario, 1960-61.

Members as at March 31, 1984

Paul Black, B.A., Chairman - Toronto
Donald Brookes, B.Comm., Vice-Chairman - Toronto
Paul Douglas, C.A. - Ottawa
Sidney Folb, Ph.D. - Toronto
Sidney Freedman, LL.B. - Toronto
John Hughes - Toronto
John Ingle, M.B.A. - Mississauga
George Kerr, Q.C., M.P.P. - Burlington
Marlene Longdon, M.Sc.N. - Burlington
Peter Lush, CPM - Burlington
Abbyann Lynch, Ph.D. - Toronto
Prof. James Reed - Toronto
Howard Richardson, M.S. - Toronto
Ann Van Vossen, M.A. - Mississauga
Mary Weaver, B.A. - Sudbury
George Zaritzky, C.G.A. - Rexdale

Retirements in 1983:

Laura Barr
Phyllis Creighton

Personnel:

Dugal Campbell, Ph.D., Scientific Consultant
Margaret Clark, Executive Director
Louise Brown
Anita Macatangay
Jessie Paterson
Audrey Stefanovich

Fundraising Program

Financial Advisory Committee

Honorary Chairman - The Honourable
Pauline M. McGibbon, C.C.
Honorary Treasurer - Peter Cole
Chairman - Peter Lush
Financial Adviser - Bill Fleming

Paul Black
Allan Blott
Gordon Bowlby
Donald Brookes
Dugal Campbell
Margaret Clark
C. Dennis Flynn
Sidney Freedman
Robert Fung
Edward Gibson
Paul Godfrey
Larry Grossman
Henry Jackman
Pat Jacobsen
George Kerr
Leon Lambert
Ian Marshall
Darcy McKeough
Edward Mercaldo
Bill Miller
Jim Miller
Grant Norton
John Prince
Gordon Sharwood
Wayne Squibb
Tim Sullivan
Bill Yeates
George Zaritzky

The past year was a very active period for The Ontario Mental Health Foundation. It was a time of evaluation, not only of its continuing research activities, but of the needs of the mentally ill in our Province.

During 1983, the Foundation set up a special Task Force to consider if the Foundation's research objectives require revision in the light of the most recent advances of knowledge. The Task Force convened a panel of experts in particular fields, and thirty-one consultants were used to examine the Foundation's research activities, and review the field of science as it relates to mental health. The Task Force was instructed to advise the Foundation concerning promising new leads for scientific research in relation to the needs of the Province, and the social and economic burdens imposed by mental illness. A special survey of the data available concerning the burden due to mental disease was also made. The report has been circulated to the Ministry of Health and others with a direct interest in mental health. More information about the Task Force report is contained in the section under "Scientific Report".

As well as an evaluation of its research objectives, Foundation members were called upon to reflect on and assess their individual commitments to the Foundation. The dedication of members is clearly shown by their participation in an active fundraising program chaired by Mr. Peter Lush. We owe a special debt of gratitude to Mr. Lush, who has undertaken the enormous task of raising funds for mental health research. We are extremely fortunate to have as honorary chairman of the fundraising program The Honourable Pauline M. McGibbon, C.C. Mrs. McGibbon has endorsed the program, and been most supportive of our efforts to raise additional funds for research.

On the inside cover of this Report are the names of Mr. Lush's Financial Advisory Committee; a group of dedicated citizens who deserve a vote of confidence, and our sincere thanks for undertaking such a formidable task.

I should like to express our gratitude to two retiring members: Mrs. Phyllis Creighton who served for one and half years as Chairman, and Miss Laura Barr, who was a member of the Executive Committee. Their knowledge about areas of need in the community, which they shared with other members, has left the Foundation with a much broader perspective and better understanding of the needs of people in the Province. To each of them, the Foundation is truly grateful.

It is a pleasure to welcome six new members: Dr. Sidney Folb, Mr. Sidney Freedman, Mr. George Kerr, M.P.P., Mrs. Marlene Longdon, Mr. Howard Richardson and Mr. Wayne Squibb who joined the Foundation during 1983 and 1984. We extend a sincere welcome and look forward to their active participation.

On behalf of the members, I wish to recognize the contributions made by the Foundation staff: Mrs. Clark, our Executive Director, who has devoted tremendous energy and devotion to ensure the efficient administration of the Foundation, and who has also been active as fundraising co-ordinator, working closely with Mr. Lush on the fundraising program.

The Foundation is very fortunate to have as its scientific consultant, Dr. Dugal Campbell. In addition to providing scientific expertise to the Foundation on a part-time basis, Dr. Campbell is a highly skilled research investigator who carries out his research at McMaster University.

No organization can function without good support staff. The Foundation has been fortunate over the years to have attracted dedicated, skilled office staff, who are sensitive to mental health problems, and who are capable and efficient in dealing with the many demands made by an organization which functions within a committee structure. To Mrs. Brown, Mrs. Macatangay, Mrs. Paterson and Mrs. Stefanovich, we extend our sincere gratitude.

The Ontario Mental Health Foundation relies heavily on its Advisory Medical Board, Research Committee and Fellowship Committee, and we are deeply grateful to the chairmen and members for their commitment to mental health research. I should also like to add a special word of thanks to Ms. Hannah Weir, who compiled the epidemiological data used by the Task Force on Research Objectives.

Paul F. Black, Chairman
June 1984

Scientific Report

During the year 1983-84 the Foundation continued its usual activities of supporting research grants and individuals. In the Fall of 1983 the annual review of research applications and individual awards took place; an exceptionally large number of research projects — 95 — was submitted to the Foundation.

Peer Review

The Foundation's review committees, comprised of researchers from Ontario and Quebec, assess the merits of every proposal. Applications with the highest rating are supported; in the past few years the Foundation's resources have been insufficient to fund all the submissions of proven merit.

The review committees are made up of scientists from many fields to ensure that the combined expertise of the members deals with all aspects of mental health. The members supplement their knowledge by consulting experts from Canada, the United States and overseas. These external assessors play an important part in the review and the Foundation is grateful for the time and effort of the scientists who volunteer to guide our decisions.

Relevance to Mental Health

To be useful a research project must be scientifically sound and promise to yield information useful to the field of mental health. Scientific merit is judged by evaluating the technical competence of the scientist, the exposition of relevant background, the command of experimental techniques, and the power of the hypothesis.

Defining how relevant a project will be is a more delicate matter. Current thinking points to constitutional and physiological factors as key elements. Physiologists, pharmacologists and chemists put forward many proposals relevant to the long-term aims of the Foundation. Although in many instances the review committee is asked to consider the workings of the central nervous system the Foundation holds the view that an individual who falls ill is a social creature; there are many environmental and psychological factors in mental diseases which merit investigation and the review committees are equipped to assess applications in these fields also. Studies of treatments and rehabilitation are also of importance to the Foundation.

The review process must keep in step with new developments

In time new scientific trends will demand attention. With the assistance of its Advisory Board the Foundation must maintain an ability to assess new directions in science. New directions for research were emphasised by the Task Force set up by the Foundation in 1983 to examine research objectives.

The Advisory Board requested the help of members of the review committees and others acquainted with the current state of work in a number of major fields of investigation: psychotic illness; the neuroses and other disorders; developmental disorders and disorders of aging; organically based disorders. For all these fields the specialists reviewed the current state of research and took into account the burden imposed upon society by the disorders falling within each category.

One conclusion of the review was that the Foundation should not give up any line of work upon which it is currently engaged; the task force concluded that the current work of the Foundation is directed to research targets which have a high priority. In addition the consultants made recommendations about new directions in which future work should go. Two recommendations are particularly important.

First it is plain that the data available about the extent of mental illness in the Province is inadequate. It is difficult to plan services and the overall direction of research without data to show the areas of need. The ideas we have at present about the burden of mental illness are approximate. Research can be helped by improved epidemiological information and consequently the Foundation's Task Force recommended that an effort be made to promote work in epidemiology.

A second line of work recommended was investigation of the services offered to the mentally ill and the efficacy of services, outside the major health centres. Much clinical work is done by "front line" professionals; little is known about the services required and offered, and there is little information about how effective the treatments actually are. These two lines of work represent important new directions; during the next years we face the task of trying to find out how sound research in these two areas can be promoted.

Foundation Programmes

As a statutory foundation, the OMHF receives most of its funds in the form of an annual grant from the Province of Ontario.

The Foundation offers 1) individual awards to those who wish to take up careers in mental health research, and 2) support for research projects undertaken by investigators who plan to do research in the field of mental health. The Foundation also supports teaching in departments of psychiatry in the medical faculties of Ontario universities.

A complete listing of all research projects, major equipment grants, and individual awards funded by the Foundation in 1983-84 will be found on the following pages of the Report.

How to Apply for Grants

Each July, a booklet is published which provides up-to-date information on grants provided by the Foundation. Copies of the Rules for Project Research and Individual Awards may be obtained from the research offices at universities in Ontario, or upon request from the Foundation.

Statement of Financial Activities
Operating Section
For the year ended March 31, 1984

	1984 $	1983 $
Revenue		
Province of Ontario	**2,451,200**	2,269,800
Investment income	**62,995**	91,401
Velleman Foundation	**—**	18,000
	2,514,195	2,379,201
Expenditures		
Awards -		
Research grants	**1,417,831**	1,168,547
Major equipment	**32,903**	26,151
Research associateships	**310,978**	331,257
Research scholarships	**157,455**	230,118
Training awards	**(1,900)**	32,850
Fellowships -		
Long-term	**74,235**	92,000
Research	**100,691**	62,888
Research studentships	**50,730**	69,976
Educational associateships	**50,353**	48,946
Clinical research and development scientists	**63,000**	—
C.M. Hincks Lectures	**17,138**	(498)
Health Research Ontario/ Smoking Conference	**—**	6,000
Velleman Scholarship	**24,058**	22,929
Sundry grants	**1,255**	—
	2,298,727	2,091,164
Administration (including fee income of $14,700) (1983 - $18,887) for administration of the COMSOC lottery grants fund and depreciation expense of $3,140 (1983 - $3,215)	**184,082**	181,367
Committee meetings expenses	**42,400**	30,968
	2,525,209	2,303,499
	(11,014)	75,702
Transfer from Endowment Fund (note 2)	**—**	21,415
Excess (deficiency) of revenue over expenditures for the year	**(11,014)**	97,117

The Ontario Mental Health Foundation
Balance Sheet
as at March 31, 1984

Assets	1984 $	1983 $
Operating Section		
Current Assets		
Cash	**8,563**	15,078
Investments - at cost, which approximates market, plus accrued interest	**508,792**	500,256
Advances to grantees (note 5)	**99,592**	120,463
Unspent awards receivable (note 6)	**15,008**	1,145
Due from Endowment Fund	**—**	19,267
Due from COMSOC Fund	**—**	15,060
Prepaid expenses	**2,740**	703
	634,695	671,972
Fixed Assets		
Furniture and fixtures - at cost	**49,438**	45,264
Accumulated depreciation	**25,848**	22,708
	23,590	22,556
Total assets - Operating Section	**658,285**	694,528
Endowment Fund		
Cash	**1,330**	6,479
Investments - at cost, which approximates market, plus accrued interest	**1,258,859**	1,096,129
Fixed assets	**8,344**	—
Total assets - Endowment Fund	**1,268,533**	1,102,608
Lottery Fund (note 3)		
Investments - at cost, which approximates market, plus accrued interest	**188,205**	225,881
Advances to grantees (note 5)	**40,003**	38,101
Due from Operating Section	**3,801**	27,580
Total assets - Lottery Fund	**232,009**	291,562
COMSOC Lottery Grants Fund - Held in Trust (note 4)		
Cash	**25,158**	—
Investments - at cost, which approximates market, plus accrued interest	**581,347**	672,558
Advances to grantees (note 5)	**73,956**	43,323
Unspent awards receivable (note 6)	**1,807**	35,034
Total assets - COMSOC Lottery Grants Fund	**682,268**	750,915
Total Assets	**2,841,095**	2,839,613

Signed on behalf of the board

Paul A. Reeve Chairman

W. W. Brookes Vice-Chairman

Liabilities and Equity	1984 $	1983 $
Operating Section		
Current Liabilities		
Research and equipment grants, fellowships and associateships payable	**258,196**	261,139
Accounts payable and accrued liabilities	**8,954**	7,461
Due to Lottery Fund	**3,801**	27,580
	270,951	296,180
Surplus - Operating Section		
Balance - beginning of year	**398,348**	301,231
Excess (deficiency) of revenue over expenditures for the year	**(11,014)**	97,117
Balance - end of year	**387,334**	398,348
Total liabilities and surplus - Operating Section	**658,285**	694,528
Endowment Fund		
Awards payable	**2,000**	2,000
Due to Operating Section	**—**	19,267
Endowment Fund Balance	**1,266,533**	1,081,341
Total liabilities and equity - Endowment Fund	**1,268,533**	1,102,608
Lottery Fund (note 3)		
Awards payable	**1,500**	—
Lottery Fund Balance	**230,509**	291,562
Total liabilities and equity - Lottery Fund	**232,009**	291,562
COMSOC Lottery Grants Fund - Held in Trust (note 4)		
Bank indebtedness	**—**	71
Grants payable	**46,461**	22,308
Due to Operating Section	**—**	15,060
COMSOC Lottery Grants Fund balance	**635,807**	713,476
Total liabilities and equity - COMSOC Lottery Grants Fund	**682,268**	750,915
Total Liabilities and Equity	**2,841,095**	2,839,613

Statement of Changes in Endowment Fund

For the year ended March 31, 1984

	1984 $	1983 $
Balance - beginning of year	**1,081,341**	954,077
Donations for the year	**101,115**	21,415
Investment income	**131,606**	139,195
	232,721	160,610
	1,314,062	1,114,687
Paul Christie Award	**—**	351
John Dewan Award	**2,052**	2,056
Fund raising expenses	**45,477**	9,524
	47,529	11,931
	1,266,533	1,102,756
Transfer to Operating Section (note 2)	**—**	21,415
Balance - end of year (note 7)	**1,266,533**	1,081,341

Statement of Changes in Lottery Fund

For the year ended March 31, 1984

	1984 $	1983 $
Balance - beginning of year	**291,562**	295,406
Investment income	**18,465**	41,035
	310,027	336,441
Awards expense - Research grants	**79,518**	44,879
Balance - end of year	**230,509**	291,562

Statement of Changes in COMSOC Lottery Grants Fund

For the year ended March 31, 1984

	1984 $	1983 $
Balance - beginning of year	**713,476**	667,486
Funds received from COMSOC for 1-3 year grants	**511,000**	595,000
Interest earned	**84,505**	133,246
	1,308,981	1,395,732
Research grants	**658,474**	650,053
Administration expense	**14,700**	32,203
	673,174	682,256
Balance - end of year	**635,807**	713,476

The Ontario Mental Health Foundation
Notes to Financial Statements
For the year ended March 31, 1984

1. Significant Accounting Policy
Fixed assets and depreciation

Fixed assets are recorded at cost less accumulated depreciation. Depreciation is calculated using the declining balance method at an annual rate of 10%.

2. Endowment Fund
Donations received are recorded in the endowment fund on a cash basis. Use of these funds is as directed by the members of the Foundation. Proceeds from donations received during the year, recorded in the Endowment Fund, are transferred to the Operating Section and made available for grants and awards in the following year at the discretion of the Directors.

3. Lottery Fund
The lottery fund represents a grant from the Provincial Lottery Awards made to the Foundation through the Ministry of Health, and is designated and fully committed for use to support the Anorexia Nervosa and Enriched Program on Alzheimer's Disease projects. The fund may not be used for other purposes.

4. COMSOC Lottery Grants Fund - Held in Trust
The Ministry of Community and Social Services (COMSOC) makes funds available from its Lottery Grants Programme for the support of research related to Childrens' Services. This research programme is being administered by The Ontario Mental Health Foundation.

5. Advances to Grantees
Certain projects are approved for funding for more than one fiscal year. Advances to grantees represent unspent funds from the current year's award which are to be carried forward and added to the following year's award.

6. Unspent Awards Receivable
Unspent awards receivable represent unspent funds at the time a project ends. Grantees are required to return this money to the Foundation.

7. Award Commitments
The Foundation has made commitments of approximately $6,617,435 to fund projects over the next eight years as follows:

1985	2,504,969
1986	1,674,355
1987	606,201
1988	540,590
1989	506,590
1990	351,232
1991	254,407
1992	179,091

8. Operating Lease

The minimum annual lease payments under an operating premises lease expiring in 1989 are $27,485 and in aggregate amount to $137,425.

Auditors' Report to the Members

We have examined the balance sheet of The Ontario Mental Health Foundation as at March 31, 1984 and the statements of financial activities - operating section, changes in endowment fund, changes in lottery fund, and changes in COMSOC lottery grants fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the Foundation as at March 31, 1984 and the results of its operations for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Coopers & Lybrand

Chartered Accountants May 16, 1984

Schedule of Expenses

For the year ended March 31, 1984

	1984 $	1983 $
Administration		
Consultant's fees and expenses	**12,144**	20,694
Salaries	**97,387**	91,516
Rent	**24,515**	24,455
Foundation's share - Canada Pension Plan, employees' pension and unemployment insurance	**10,902**	9,964
Office supplies and expense	**26,783**	23,364
Audit	**3,875**	3,500
Telephone and telegraph	**4,470**	3,886
Depreciation - office furniture and fixtures	**3,140**	3,215
Sundry	**866**	752
Bank charges	**—**	21
	184,082	181,367

Additional Comments of Auditors

The schedule of expenses is presented as supplementary information only. In this respect, it does not form part of the financial statements of The Ontario Mental Health Foundation for the year ended March 31, 1984 and hence is excluded from the opinion expressed in our report dated May 16, 1984 to the members of such financial statements. The information in this schedule has been subject to audit procedures only to the extent necessary to express an opinion on the financial statements of the foundation and, in our opinion, is fairly presented in all respects material to those financial statements.

Coopers & Lybrand

Chartered Accountants May 16, 1984

The Foundation provides support for investigation into many aspects of mental health and mental disease. The field of endeavour is wide and calls upon the resources of specialists in many scientific fields. The following examples have been chosen to show the range of the Foundation's effort.

1. Positron emission tomography

The Foundation has supported, as have a number of other agencies, the development of a positron emission tomograph (PET) scanner at McMaster University. This work is directed by Dr. Steven Garnett of the Department of Nuclear Medicine; he collaborates with Dr. Jock Cleghorn (a clinical research and development scientist of the Foundation) and Dr. Greg Brown (a research associate of the Foundation). The PET scanner is a device which "images" an organ in the body by recording the emission of particles emitted by radio-labelled substances. As substances are absorbed and concentrated in the body the PET scanner records and displays the sites where the substances are stored and used. Investigations based upon those substances which become concentrated in the brain can have a direct bearing upon mental health.

The PET scanner makes it possible to compare brain chemistry in schizophrenic patients and normal individuals. Dr. Garnett, Dr. Cleghorn and Dr. Brown have begun such an investigation; they plan to examine a series of schizophrenic patients in whom no drug is active and who are free of organic brain disease.

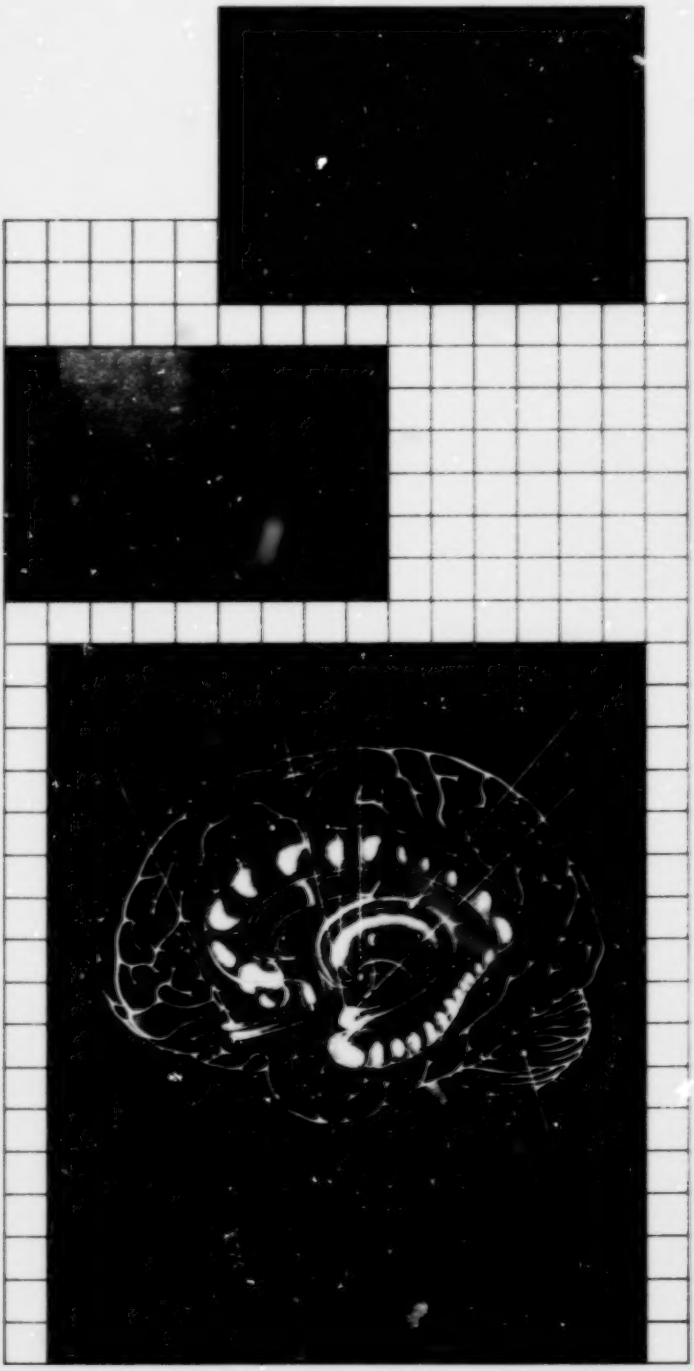
2. Chemistry of Alzheimer's disease

In this century the population of Ontario will include an increasing number of elderly individuals. Consequently there will be an increase in the number of those who suffer from the diseases, such as dementia, found in the elderly. The epidemiological review made for the Foundation last summer indicated that the numbers of elderly persons in the Province may have been underestimated. Amongst the disorders of the aged is Alzheimer's disease. In this illness dementia is a symptom. It is known to be associated with alterations within brain cells (which can be recognized by microscopic examination) and loss of brain cells. The cells are lost from a region of the brain where a substance called acetylcholine is normally active. In other diseases such a depletion of cells and chemicals may be made good by providing the individual with substances the brain can use to synthesize the missing chemical. Dr. Khem Jhamandas at Queen's University is investigating the effect of such a drug treatment on the neurochemical and behavioural changes associated with loss of acetylcholine in the brain. He induces a condition, like the human disease, in an animal and then attempts to see if the "disease" which he has caused in the animal can be reversed by an appropriate drug treatment.

3. Extra chromosomes

The inherited genetic material to be found in each cell of an organism is found in structures called chromosomes. In man 46 chromosomes are normally found, arranged as 23 pairs; occasionally an extra chromosome is found in the cells of an individual and, when there is an extra sex chromosome, the set can be described as, for example, 47 XXY, to denote a male with one additional X chromosome.

- Problems of aging
- Family and marital problems
- Brain chemistry



- Emotional problems in children
- Effects of drugs on the brain

Individuals with unusual X chromosome complements have been known for some years and their physical growth and development have been closely examined. However the pattern of intellectual and personality development of these individuals has not been studied in the same manner; such studies may provide one way of assessing how far cognitive differences between males and females — for example, the tendency for males to perform better than females on spatial tasks — can be attributed to inherited qualities. Dr. Charles Netley and Dr. Joanne Rovet at the Hospital for Sick Children have access to the world's largest sample of individuals with an extra X chromosome; they are examining these boys as they grow up to test specific hypotheses about the relations between the X and Y chromosomes and intellectual ability. The experiment has implications for the inheritance of intellect and the treatment of learning disabilities.

4. Sexual offenders

A problem which arouses public interest is the disposition of offenders whose mental balance is disturbed. These individuals may be sent to institutions where they can receive psychological and psychiatric care. One of the Foundation's investigators Dr. Vern Quinsey works at the Oak Ridge Mental Health Centre at Penetanguishene. He is making a study of the factors which influence the conduct of men whose behaviour offends the community legally and morally. He investigates the mental set of those who commit rapes and those whose sexual activities are directed, for example, towards children.

Because offenders will, in many cases, be returned to the community it is important to know something of the causes of behaviour so that treatment can be given whilst they are in an institution. Dr. Quinsey has shown the role of violence as one factor in the conduct of rapists and he has also examined the additional influence of alcohol. In addition Dr. Quinsey has paid particular attention to ways in which violent conduct within the institution can be reduced; this is worthwhile because it influences the offenders and helps those who are charged with looking after offenders.

5. Cognitive therapy

A major illness to which the Foundation has devoted much attention is depression. Depression is a serious illness because many individuals suffer from it (the life-time expectation of suffering from depression is one in ten) and because the consequences of a depression may be severe. One common method of treatment is pharmacological; another form of treatment — cognitive therapy — is being investigated by Dr. Brian Shaw at the Clarke Institute of Psychiatry. It is a behavioural form of psychotherapy. The argument behind this treatment is that depression is marked by patterns of thought which lead to loss of a positive outlook on life. These thought patterns have to be altered in order for the patient to take a more realistic attitude and to permit an objective view of his or her own conduct. Investigation suggests that, for some classes of patient, cognitive therapy is as effective as a drug therapy and it is free of the side-effects of drugs. The studies being conducted at the Clarke Institute are trials of what could be a major treatment for depression.

Research Grants and Major Equipment Grants 1983-84

The Foundation received 73 new research grant applications and 11 applications for major equipment. Of this number 26 new grants and 3 major equipment requests were funded for a total of $789,309. In addition, 20 ongoing grants in the amount of $660,888. were supported.

Carleton University, Ottawa

Dr. H. Anisman **$30,237.**

Sensitization of catecholaminergic mechanisms by early life trauma: relationship to behavioral disturbances in adulthood.
Dr. Anisman is conducting an investigation to find out if stress in early life produces "depression" in an animal model of the disease. The animals exposed to early stress are examined to establish if liability to depression is increased by an alteration in brain neurochemistry induced by early experience.

McMaster University, Hamilton

Dr. P. Chang **$39,716.**

Pseudosulfatase deficiency - a paradox in neurodegenerative diseases.
There are a number of rare diseases in which children suffer progressive degeneration of the nervous system. Cells from patients with one such disease are examined and the biochemistry of the disorder is worked out in detail. A biochemical marker for the condition and a greater knowledge of the genetics of the condition may lead to the ability to identify the disease by a laboratory test early in life.

Drs. E.S. Garnett & G. Firnau **$3,730.**

To measure the distribution and concentration of the central dopaminergic receptors in normal man and patients with schizophrenic illness.
Dr. Garnett and his colleagues are developing a new instrument called the positron emission tomograph (PET) scanner. This machine shows the turnover of chemicals, and their location, in the brain. The machine can be used to test recent theories that mental disorders have a chemical basis.

Dr. P. Grof **$39,061.**

Neuroendocrine response and recurrence liability in affective disorders.
One puzzling feature of affective illness is that patients who have been treated and cured may fall ill again. This study tries to detect which individuals are likely to relapse. The method is to examine hormonal responses to challenge tests. Results suggest there is one group of patients with a relapsing illness, which can be identified by challenge tests, whilst still in hospital.

Dr. P. Links **$30,069.**

Studies in borderline patients: establishment of valid subgroups.
The accuracy of diagnosis is a recurring problem in psychiatric research. This study examines the accuracy of one diagnosis: "borderline patient". These patients do not fall into one of the established psychiatric categories and are discerned as having features peculiar to themselves. This study is intended to provide criteria to make the diagnosis certain.

Dr. L.P. Niles **$36,658.**

Melatonin and n-acetylserotonin receptors and pineal effects on brain and endocrine physiology (including a Major Equipment Grant).
Among brain chemicals manufactured by the pineal gland are some which alter in their concentration with the daily cycle of light and dark. This investigation looks at two of the substances — melatonin and n-acetylserotonin — which are thought to influence depressive illness.

Dr. E. Rothstein **$27,700.**

Lymphocyte dopamine receptor binding in schizophrenia.
The theory that schizophrenia is a disorder of dopamine receptors can possibly be examined by looking at blood cells because these cells also contain dopamine receptors. The object of the research is to find out whether the dopamine receptors found in cells circulating in the blood are similar to those found in the brains of patients with schizophrenia.

Dr. J. Seggie **$34,949.**

Lithium and 24-hour rhythms.
In manic-depressive psychosis there are alterations in physiological functions which are normally related to the cycle of light and dark. Dr. Seggie is examining the action of lithium — a drug used to treat manic-depression — in altering these cycles in experimental animals to learn how the drug relieves the disease.

Drs. L. Siegel & J. Crawford **$43,100.**

The role of perinatal risk factors in subsequent cognitive and language development.
Paediatricians are now able to save babies who are born too soon and too small to survive without special care. This study follows two groups of infants treated in the neonatal intensive care unit to learn if these babies are damaged. Careful checks are being made of the babies' development — especially speech and intellect.

University of Ottawa

Dr. P. Hrdina **$31,470.**

Studies on the site and mode of action of antidepressants.
These studies aim to find out the precise location in the brain where antidepressant drugs used in the treatment of affective disorders make their effect. It attempts to show

in which parts of the brain the drugs are most likely to have an effect and further, if these locations have an association with the disorders seen in depressed patients.

Dr. P. Hrdina **$30,957.**

Pharmacokinetics and clinical effects of 'second generation' antidepressants.
As new antidepressant drugs are developed some show a greater selectivity of action in the brain than others. This study tries to find out precisely where in the brain new-generation drugs have their greatest effect; and to show how they influence the symptoms for which they are prescribed as treatment.

Dr. D.A.V. Peters **$29,295.**

Prenatal stress: effects on brain development.
It has been said that stress during pregnancy can affect the behaviour of offspring. This study examines the effects of pre-natal stress on the chemistry of the central nervous system and the later behaviour of animals exposed to stress during their time in the womb.

Dr. R. Pivik **$33,112.**

Visual-vestibular interactions in psychosis.
In a number of psychotic patients there are interactions between the visual and the vestibular systems. These lead to alterations in patients' ability to fix their gaze on a target when the head moves and to track a moving object. Dr. Pivik will try to find out how this dysfunction is exhibited and how it is related to psychotic illness.

Dr. R. Singhal **$32,500.**

Central Neurotransmitter systems: modification by psychotherapeutic agents.
This study is directed at finding out in precise terms how lithium, commonly used in the treatment of mania, influences a number of the naturally occurring chemicals which function in brain cells.

Drs. R. Singhal & J. Telner **$25,000.**

Antidepressant discriminability, neurochemical correlates and hormonal factors in an animal model of depression.
Attempts have been made to find models for psychiatric diseases in animals. Most models fail to mimic the symptoms of depression. This is a study of a model for depressive illness called "learned helplessness". The primary aim is to examine if this stress-based model is a real analogue for depression.

Queen's University, Kingston

Dr. J. Holden **$41,140.**

Identification of a DNA marker closely linked to the mutation causing X-linked mental retardation.
The aim of the study is to find a genetic marker for a form of mental retardation found in people whose X-chromosome has suffered a mutation. It seems possible that a marker can be found by direct analysis of the DNA

in the chromosomes. The use of the marker, when one is found, will be tested by examining the families of affected individuals.

Dr. K. Jhamandas **$32,999.**

Effects of choline treatment on neurochemical and behavioural deficits associated with central cholinergic damage.
Amongst the diseases of elderly people is Alzheimer's disease — marked by disorders of learning and memory. One proposition which has been put forward is that the symptoms are associated with a chemical deficiency in the brain. The investigation is to find ways in which the brain levels of the deficient chemical can be increased by making an animal model of the disease.

Dr. F. Letemendia **$18,827.**

Major Equipment Grant — Apple II 48K microcomputer, Hewlett Packard 3964, a tape recorder.
The computer system makes precise and mathematical analyses of the electrical activity of the brain during seizure activity. These analyses cannot be made by eye. The recorder is used to store the records of brain activity.

Dr. C. Woogh **$18,648.**

A cohort study of multiply readmitted non-psychotic patients.
This investigation is designed to find out how multiple re-admission comes about in patients with a non-psychotic illness. The idea is to establish the characteristics of the patients and to analyze the factors which bring about the repeated admissions.

University of Toronto

Dr. K. Blankstein **$8,154.**

Development and validation of a perceived physiological self-regulation scale.
A recent development in the treatment of patients with psychosomatic and neurotic disease is the use of biofeedback. Dr. Blankstein is developing a test to detect which patients are more likely to be adept at using biofeedback.

Dr. P. Carlen **$28,132.**

Altered sedative-hypnotic drug responses and excitable membrane properties of neurons from old compared to younger mature neurons.
As patients become older the efficacy of drugs alters. This study examines the effects of sedative and hypnotic drugs on older and younger neurons grown in a laboratory by examining differences between younger and older cells.

Dr. U. DeBoni **$37,412.**

The brain cell nucleus in senile dementia and in model systems.
Recent studies of Alzheimer's disease suggest two different sources of dementia which marks this illness: an alteration in the chromatin found in brain cells; and

an accumulation of the element aluminum. Dr. DeBoni is using cultures of cells in his laboratory to examine if aluminum produces alterations in the chromatin found in cells.

Dr. T. Hattori **$34,310.**

Detailed anatomy of transmitter receptor sites in the basal ganglia.
An important aspect of studying the brain is to find out the precise connections between one group of cells and another. This study will use recently developed techniques to examine the relations between parts of the brain which are known to be associated with important mental illnesses by tracing certain nerve fibres to their final destination.

Dr. C. Leprohon **$35,495.**

Biosynthesis of phosphatidylcholine from phosphatidylethanolamine in central nervous tissue: stimulation by catecholamines.
This study examines in detail how brain cells manufacture the substances which are used to transmit signals from one cell to another. There is disagreement about the way in which different classes of neurotransmitter substances are synthesized by brain cells; this investigation aims to find out the source of the chemical controls which direct the chemical manufacture.

Dr. D. McLachlan **$60,954.**

Dementia of the Alzheimer type.
Examination of the brain cells of patients who suffer from Alzheimer's disease show certain characteristic changes. Dr. McLachlan is examining the idea that these changes are due to aluminum in the brain and to an alteration in the manner by which instructions contained in the chromosomes are translated within each cell.

Dr. P. Seeman **$40,630.**

Dopamine receptors in post-mortem schizophrenia tissues.
A leading theory put forward to explain schizophrenia is that patients have an abnormality in the activity of one neurotransmitter — dopamine. This study attempts to examine the hypothesis by examination of patients' brains post mortem.

Dr. L. Spero **$29,901.**

The role of the specific 3H-phenytoin binding site and its endogenous peptide ligand in the etiology and treatment of epilepsy.
The effects of drugs used in the treatment of epilepsy are not well understood. This investigation is designed to lead to better information about the site of action of the drugs and also about the ways in which they alter brain activity.

University of Western Ontario, London

Dr. M. Ball **$50,633.**

Neuropathological lesions in Alzheimer's dementia: correlations with clinical and biochemical changes.
This investigation calls for clinical and psychological examination of patients with Alzheimer's disease and for study of the brain post-mortem. Precise measurement of the alterations in brain structure can be correlated with measured changes in function made before death.

Dr. B. Bucher **$18,450.**

Generalization of training effects: harmful and beneficial effects of positive and aversive procedures for training complex skills.
A variety of techniques are available to remedy language disorders. Little is known about the relative efficiency of the different methods and how the success in any one procedure may promote others. Dr. Bucher is making a study of which techniques are the most effective.

Dr. C. Gibson **$41,075.**

Noradrenergic systems in aging and dementia.
Changes in particular parts of the brain are found in Alzheimer's disease. One part, the locus coeruleus, influences locomotion, learning, memory, mood and sleep. A study of biochemistry and cell structure in the locus coeruleus will be made on brain tissue from normals and Alzheimer patients.

Clarke Institute of Psychiatry, Toronto

Dr. R. Eastwood **$20,009.**

Hearing impairment and mental disorders: an investigation of psychiatric and psycho-social factors associated with hearing loss and compliance with aural rehabilitation in a geriatric population.
It is often said that psychiatric symptoms in elderly people — for example, confusion or unwarranted suspicion — are due to the fact that they do not see or hear well. This study is designed to establish whether there is a relationship between hearing, vision and psychopathological symptoms.

Dr. K. Freund **$4,000.**

Disorders of courtship behaviour.
Dr. Freund has developed a view of deviant sexual behaviours which emphasises that each deviant behaviour represents, in vestigial form, an activity which could properly form part of courtship. This view leads to a new classification of sexual offenders and treatment can be planned in a more rational way.

Dr. J. Jeffries **$24,246.**

Focal family therapy with families of schizophrenic non-responders: an outcome study.
Recent research suggests that the family has an impact on the course of illness in the schizophrenic patient. It is not

clear how the family exacerbates or alleviates symptoms. This study is designed to find out if psycho-therapy which involves the family improves the course of patients discharged from hospital.

Dr. B. Madras **$52,730.**

Isolation of brain dopamine receptors.
The investigation aims at extracting from brain tissue and then purifying, dopamine "receptors" so that the characteristics of the receptors may be examined. Dopamine is a neurotransmitter said to be more than normally active in diseases such as: schizophrenia; Huntington's chorea.

Dr. B. Shaw **$7,800.**

Cognitive assessment of depression.
In the affective disorders the primary change is in mood; however there are often significant changes in cognition because the patients do not interpret the world in the same way as others do. This study examines the importance of the cognitive aspect of affective disorders and attempts to assess how important they are in maintaining the disease.

Dr. J. Warsh **$34,173.**

Hydroxylated metabolites of tricyclic antidepressants: clinical significance.
Amongst the drugs used to treat psychiatric illnesses are tricyclic antidepressants. This work measures what happens to the drugs once they are in the body — with the objective of finding out what can be established about the circulating levels of drugs in relation to their efficacy in altering mood.

Dr. J. Warsh and P. Whitaker **$27,196.**

Utility and clinical significance of platelet 3H-imipramine binding in psychiatry.
Diseases which are given the same label may turn out on closer examination to contain a variety of patients. Samples of blood from patients with affective disorders are examined; it is hoped that characteristics can be established in the blood to distinguish between different categories of depressed patients.

Hospital for Sick Children, Toronto

Dr. L. Becker **$36,007.**

Dendritic and neuropeptide profiles in mental retardation.
The brains of patients with serious mental retardation may not show any gross abnormalities. This investigation is designed to show in the microstructure of the brain of patients with Down's syndrome that development proceeds in a normal fashion up to approximately six months of age and that thereafter pathological changes are seen. If so intervention at an early age may prevent the regression from occurring.

Dr. M. Dennis **$7,834.**

The effects of congential, infantile, and postinfantile brain damage on subsequent intelligence.
Damage to the developing brain can occur in the womb, at birth, or during childhood. Such early damage may cause an impairment of intelligence. Dr. Dennis is trying to find out what types of damage place the child at risk.

Dr. S. Goldberg and K. Minde **$16,285.**

Parental reactions to death and illness of newborns.
The death of a newly born child may place parents at risk for subsequent psychiatric disturbance and can influence the development of children born later. Dr. Goldberg is carrying out a prospective study of those whose child died in early life to find out if the death and social support alter the ability of the family to withstand stress.

Dr. K. Minde and R. Bates **$43,287.**

Development of aggression in preschoolers and its relation to socialization.
Aggression in children is a problem which troubles parents and school teachers. Little is known about the development of aggression. This study aims to find out if aggression is a consistent feature of an individual.

Dr. C. Netley and J. Rovet **$43,428.**

The X chromosome: temperamental, intellectual and biological correlates.
It is known that some children have unusual numbers of X or Y chromosomes. To date much of the research concerning children with these abnormalities has been directed to physical growth rather than to intellectual and personality development; this investigation will fill a gap in our knowledge.

■ Toronto General Hospital

Dr. P. Garfinkel **$53,456.**

Anorexia nervosa: factors related to its diagnosis and outcome.
Anorexia nervosa is a condition most commonly found amongst young women. Dr. Garfinkel is investigating the factors which predispose individuals to this illness and ways in which it may be treated. He is examining the prevalence of the condition overseas and in Canada to assess social factors in this disease.

Dr. G. Rodin **$18,750.**

Renal transplant failure: the medical and psychosocial consequences.
The study investigates what happens to the psychological and social states of a patient in whom a kidney transplant fails. It will give information about the consequences of transplant failure and provide a way of assessing patients who are at risk for psychological and social morbidity due to failure of treatment.

Mount Sinai Hospital, Toronto

Dr. J. Hallonquist **$29,725.**

Effects of electroconvulsive shock on circadian rhythms in rodents: implications for affective disorders.
Dr. Hallonquist aims to elucidate the mechanism which underlies the outcome of electro-convulsive therapy. Depressive disorders produce alterations in biological rhythms; this investigation will show if electroconvulsive shock restores or disturbs biological rhythms in experimental animals.

Sunnybrook Medical Centre, Toronto

Dr. M. Mamelak **$30,000.**

A pharmacological paradigm for manic depressive illness: the effects of lithium.
This study will develop a pharmacological animal model for manic-depressive illness. The model is made by giving rats the same drugs as are used to treat the illness in humans and then withdrawing them; the sequence of depression and excitement caused by the drug is thought to mimic a manic-depressive illness.

Mental Health Centre, Penetanguishene

Dr. V. Quinsey **$28,550.**

Studies in the assessment and treatment of sexual offenders.
A persistent medico-legal problem is the treatment to be accorded to people whose conduct is illegal and due to mental disease, e.g. sexual offenders. This study tries to find out what governs the behaviour of such individuals – in particular the stimulation afforded by violence.

Dr. V. Quinsey **$8,407.**

Major Equipment Grant - Apple III computer system.
The computer system will be used to reduce and analyse data from the experiments carried out in the Oak Ridge Mental Health Centre.

In 1983-84, 60 Individual Award Applications were received. Of this number 11 were supported for a total of $257,027.

In addition, the Foundation supported 22 ongoing Individual Awards in the amount of $548,497. At the University of Ottawa, Queen's University and the University of Western Ontario a total of $50,625. was provided for the support of three Educational Associateships.

Carleton University, Ottawa

Research Student	Mr. B. Bialik

McMaster University, Hamilton

Research Associates	Dr. G. Brown Dr. D. Campbell Dr. J. Seggie
Research Scholars	Dr. R. Mishra Dr. M. Pisa
Clinical Research and Development Scientist	Dr. J. Cleghorn
Long-Term Fellows	Dr. E. Grof Dr. L. Niles Dr. E. Werstiuk
Research Student	Mr. J. Ramwani
Velleman Scholarship	Dr. P. Chang

University of Ottawa

Research Associate	Dr. R. Pivik
Research Fellow	Dr. J. Thakar
Educational Associate	Dr. P. Beausejour

Queen's University, Kingston

Research Associate	Dr. D. Soudek
Research Student	Mr. M. Marien
Educational Associate	Dr. F. Jarrett

University of Toronto

Research Associates	Dr. U. DeBoni Dr. M. Moscovitch
Research Students	Mr. G. Guillemette Ms. W. Taylor

University of Western Ontario, London

Research Scholar	Dr. C. Gibson
Educational Associate	Dr. E. Waring

Clarke Institute of Psychiatry, Toronto

Research Scholar	Dr. S. Tang
Long-Term Fellow	Dr. P. Whitaker (3 months)
Research Fellow	Dr. R. Cooke
Research Student	Ms. A. Dumbrille-Ross

Hospital for Sick Children, Toronto

Research Associate	Dr. M. Dennis
Clinical Research and Development Scientist	Dr. W. Sherwood
Research Student	Ms. P. Chee

Toronto General Hospital

Research Fellows	Dr. B. Dorian Dr. B. Toner

Wellesley Hospital, Toronto

Research Scholar	Dr. R. Adamec

Surrey Place Centre, Toronto

Sundry Award	Dr. A. Dalton

John Dewan Awards

In 1983-84 two researchers were chosen to receive the John Dewan Award; Dr. Ram Mishra, McMaster University, Hamilton, and Dr. Gordon Winocur, Trent University, Peterborough.

Dr. Mishra is an Ontario Mental Health Foundation Research Scholar. In his post-doctoral work he specialized in research on brain chemical transmitters. He was one of the first investigators to show that alterations could be made in the sensitivity of the brain's response to particular chemicals by carrying out operations in the brain itself. These experiments provide an experimental analogue to diseases in which parts of the brain become abnormally sensitive because of loss or damage to cells in remote parts of the brain.

Since 1976 Dr. Mishra has worked at McMaster University in the Department of Neurosciences. Several major findings have emerged from his work there on dopamine systems. In conjunction with other colleagues Dr. Mishra has found that the activity of dopamine can be blocked by chemicals introduced into the brain. Dr. Mishra has examined in more detail the supersensitivity reaction to dopamine as it develops over the course of time following damage to selected regions of the brain; in addition, he has examined how the dopamine system interacts with chemical systems which use other neurotransmitters.

Dr. Mishra is currently engaged in examining the brains of patients who have had diseases during their lifetime. The preliminary data from his work indicates that in patients who have suffered from schizophrenia there are increases in number of sites which are activated by the neurotransmitter, dopamine, in which Dr. Mishra has been particularly interested.

In 1983-84 Dr. Mishra became a visiting scientist at the Roche Institute for Molecular Biology. There he is working on the production and analysis of a biological system (monoclonal antibodies) which will provide a more precise way of defining the site of action of dopamine in the brain. Dr. Mishra's work has been funded by the Ontario Mental Health Foundation, the Medical Research Council, the

Parkinson Foundation of Canada and National Institute of Mental Health. He has trained a number of students who have gone to other institutions to carry on the same line of work and provide expertise in neurochemistry in Canadian universities.

Dr. Gordon Winocur of the Department of Psychology at Trent University is an investigator whose topic is the neuropsychology of memory. He has examined two different ways of thinking about memory: the physiology of memory — in which the ability to recall items is referred to structures in the brain; and the social context of memory — in which the ability to recall items is referred to the cues provided by our surroundings.

Dr. Winocur has examined the idea that certain structures in the brain are particularly important in providing the site and control of memory. His experiments show that, in animals, structures, similar to structures found in the human brain, are critical to an animal's ability to find its way about.

His results led Dr. Winocur to believe that mild memory disorders, such as those that occur in old people, may be due to deterioration with age of the same parts of the brain as he had examined in animals. Dr. Winocur has made a contribution to the neuropsychology of memory by showing that similar principles can account for memory disorders in experimental animals, humans who suffer from amnesia and old people in general — especially those who move to new surroundings. His work on aging has a practical relevance; it suggests techniques of memory remediation in the elderly and they call attention to the negative effects of removing old folk from familiar surroundings. Thus his work, as well as being of importance in helping us to understand the nature of the brain, has a practical importance for dealing with the elderly population.

The Ruth Schwartz Foundation

During 1983-84, the Ruth Schwartz Foundation donated a total of $10,000 to the Ontario Mental Health Foundation to assist in supporting research related to emotionally disturbed children.

In keeping with the interests of the Ruth Schwartz Foundation, these funds were used to assist the research study on development of aggression in preschoolers and its relation to socialization being carried out by Dr. K. Minde and Dr. R. Bates at the Hospital for Sick Children.

Velleman Scholarship

The Velleman Research Scholarship was awarded to Dr. Patricia Chang, Department of Pediatrics, McMaster University, who is now in the fourth and final year of this award.

Dr. Chang has uncovered vital clues to the nature of genetically determined disorders involving biochemical deficiencies in certain substances known as isoenzymes and, in particular, the arylsulfatases. Inborn errors in the metabolism of these substances lead to various adverse effects, among which degenerative changes in the brain

can be a striking feature. Such changes are associated clinically with various form of mental disability and deterioration.

The methods of investigation provide a novel model which could, in due course, be applied with advantage to such other varieties of mental handicap. Such investigations have preventive implications with the prospect of direct benefit to families at risk.

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